

## Claims:

1. An adhesive comprising a polymer comprising at least 50 mol% of one or more C3 to C40 olefins where the polymer has:
  - a) a Dot T-Peel of 1 Newton or more on Kraft paper;
  - b) an Mw of 10,000 to 100,000; and
  - c) a branching index (g') of 0.98 or less measured at the Mz of the polymer when the polymer has an Mw of 10,000 to 60,000, or  
a branching index (g') of 0.95 or less measured at the Mz of the polymer when the polymer has an Mw of 10,000 to 100,000.
2. The adhesive of claim 1 wherein the polymer has:
  - a) a Dot T-Peel of 1 Newton or more on Kraft paper;
  - b) a branching index (g') of 0.98 or less measured at the Mz of the polymer;
  - c) a Mw of 10,000 to 60,000; and
  - d) a heat of fusion of 1 to 50 J/g.
3. The adhesive of claim 1 where the polymer is a homopolypropylene or a copolymer of propylene and up to 5 mole% ethylene having:
  - a) an isotactic run length of 1 to 30,
  - b) a percent of r dyad of greater than 20%, and
  - c) a heat of fusion of between 1 and 70 J/g.
4. The adhesive of claim 1 wherein the polymer comprises propylene and less than 15 mole % of ethylene.
5. The adhesive of claim 1 wherein the polymer has a melt viscosity of 7000 mPa·sec or less at 190°C.

6. The adhesive of claim 1 wherein the polymer has a melt viscosity of 5000 mPa•sec or less at 190°C.
7. The adhesive of claim 1 wherein the polymer has a melt viscosity of between 250 and 6000 mPa•sec at 190°C.
8. The adhesive of claim 1 wherein the polymer has a melt viscosity of between 500 and 3000 mPa•sec at 190°C.
9. The adhesive of claim 4 wherein the polymer has a Tg of 0°C or less.
10. The adhesive of claim 4 wherein the polymer has a Tg of -10°C or less.
11. The adhesive of claim 1 wherein the polymer has an Mw of 10,000 to 75,000 and a branching index of 0.6 or less.
12. The adhesive of claim 1 wherein the polymer has an Mw of 10,000 to 50,000 and a branching index of 0.7 or less.
13. The adhesive of claim 1 wherein the polymer has an Mw of 10,000 to 30,000 and a branching index of 0.98 or less.
14. The adhesive of claim 1 wherein the polymer has a branching index (g') of 0.90 or less measured at the Mz of the polymer.
15. The adhesive of claim 1 wherein the SEC graph of the polymer is bi- or multi-modal.
16. The adhesive of claim 1 wherein the polymer has an amorphous content of at least 50%.
17. The adhesive of claim 1 wherein the polymer has

- a) a peak melting point between 60 and 190°C;
  - b) a heat of fusion of 0 to 70 J/g; and
  - c) a melt viscosity of 8000 mPa•sec or less at 190°C.
18. The adhesive of claim 1 wherein the polymer has:
- a) a Tg of -10°C or less;
  - b) a melt viscosity between 2000 and 6000 mPa•sec;
  - c) a molecular weight distribution (Mw/Mn) of at least 5; and
  - d) a bi- or multi-modal SEC graph of the polymer.
19. The adhesive of claim 1 wherein the polymer has a crystallinity of at least 5%.
20. The adhesive of claim 1 wherein the polymer has 20 wt.% or more of hexane room temperature soluble fraction and 50 wt % or less of Soxhlet heptane insolubles.
21. The adhesive of claim 1 wherein the polymer comprises less than 3.0 mole % ethylene.
22. The adhesive of claim 1 wherein the polymer comprises less than 1.0 mole % ethylene.
23. A composition comprising the polymer of claim 1 and a functionalized wax.
24. A composition comprising the polymer of claim 1 and a wax.
25. A composition comprising the polymer of claim 1 and a hydrocarbon resin.
26. The adhesive of claim 1 wherein the polymer further comprises diolefin.

27. The adhesive of claim 26 wherein the diolefin comprises one or more C4 to C40 diolefins.
28. The adhesive of claim 26 wherein the diolefin is selected from the group consisting of 1,6-heptadiene, 1,7-octadiene, 1,8-nonadiene, 1,9-decadiene, 1,10-undecadiene, 1,11-dodecadiene, 1,12-tridecadiene, 1,13-tetradecadiene, cyclopentadiene, vinylnorbornene, norbornadiene, ethylidene norbornene, divinylbenzene, dicyclopentadiene, polybutadienes having an Mw less than 1000 g/mol, or combinations thereof.
29. The adhesive of claim 1 wherein the polymer has an Mz/Mn of 2 to 200.
30. The adhesive of claim 1 wherein the polymer has an Mz of 15,000 to 500,000.
31. The adhesive of claim 1 wherein the polymer has a SAFT of 50 to 150°C.
32. The adhesive of claim 1 wherein the polymer has a Shore A hardness of 90 or less.
33. The adhesive of claim 1 wherein the polymer has a set time of 5 seconds or less.
34. The adhesive of claim 1 wherein the polymer has an Mw/Mn of 2 to 75.
35. The adhesive of claim 1 wherein the polymer has a percent crystallinity of between 5 and 40 %.
36. The adhesive of claim 1 wherein the g' is 0.90 or less.
37. The adhesive of claim 1 wherein the g' is 0.80 or less.

38. The adhesive of claim 1 wherein the polymer has a viscosity at 190 °C of 20,000 mPa•s or less.
39. The adhesive of claim 1 wherein the polymer has a viscosity at 160 °C of 8,000 mPa•s or less.
40. The adhesive of claim 1 wherein the polymer has a heat of fusion greater than 10 J/g.
41. The adhesive of claim 1 wherein the polymer has heat of fusion of from 20 to 70 J/g.
42. The adhesive of claim 1 wherein the polymer has heat of fusion of from 30 to 60 J/g.
43. The adhesive of claim 1 wherein the polymer has a percent crystallinity of 10-30 %.
44. The adhesive of claim 1 wherein the polymer has tensile strength at break of 0.75 MPa or more.
45. The adhesive of claim 1 wherein the polymer has a SAFT of 100-130°C.
46. The adhesive of claim 1 wherein the polymer has an Mz/Mn of 2 to 200.
47. The adhesive of claim 1 wherein the polymer has a Shore A hardness of 20-90.
48. The adhesive of claim 1 wherein the polymer has a Dot T-Peel of between 3 and 10,000 N.

49. The adhesive of claim 1 wherein the polymer has a Dot T-Peel of between 10 and 2,000 N.

50. The adhesive of claim 1 wherein the polymer has a tensile strength at break of 0.6 MPa or more.

51. The adhesive of claim 1 wherein the polymer has a Tg of between 5 and -65°C.

52. The adhesive of claim 1 wherein the polymer comprises at least 50 weight % propylene.

53. The adhesive of claim 1 wherein the polymer comprises at least 50 weight % propylene and up to 50 weight % of a comonomer selected from the group consisting of ethylene, butene, hexene, octene, decene, dodecene, pentene, heptene, nonene, 4-methyl-pentene-1, 3-methyl pentene-1, 3,5,5-trimethyl-hexene-1, and 5-ethyl-1-nonene.

54. The adhesive of claim 1 wherein the polymer comprises at least 50 weight % propylene and 5 weight % or less of ethylene.

55. The adhesive of claim 1 wherein the polymer comprises up to 10 weight % of a diene selected from the group consisting of: butadiene, pentadiene, hexadiene, heptadiene, octadiene, nonadiene, decadiene, undecadiene, dodecadiene, tridecadiene, tetradecadiene, pentadecadiene, hexadecadiene, heptadecadiene, octadecadiene, nonadecadiene, icosadiene, heneicosadiene, docosadiene, tricosadiene, tetracosadiene, pentacosadiene, hexacosadiene, heptacosadiene, octacosadiene, nonacosadiene, triacontadiene, cyclopentadiene, vinylnorbornene, norbornadiene, ethylidene norbornene, divinylbenzene, and dicyclopentadiene.

56. The adhesive of claim 1 wherein the adhesive further comprises one or more tackifiers.

57. The adhesive of claim 1 wherein the adhesive further comprises one or more tackifiers selected from the group consisting of aliphatic hydrocarbon resins, aromatic modified aliphatic hydrocarbon resins, hydrogenated polycyclopentadiene resins, polycyclopentadiene resins, gum rosins, gum rosin esters, wood rosins, wood rosin esters, tall oil rosins, tall oil rosin esters, polyterpenes, aromatic modified polyterpenes, terpene phenolics, aromatic modified hydrogenated polycyclopentadiene resins, hydrogenated aliphatic resin, hydrogenated aliphatic aromatic resins, hydrogenated terpenes and modified terpenes, hydrogenated rosin acids, hydrogenated rosin esters, derivatives thereof, and combinations thereof.

58. The adhesive of claim 1 wherein the adhesive further comprises one or more waxes selected from the group consisting of polar waxes, non-polar waxes, Fischer-Tropsch waxes, oxidized Fischer-Tropsch waxes, hydroxystearamide waxes, functionalized waxes, polypropylene waxes, polyethylene waxes, wax modifiers, and combinations thereof.

59. The adhesive of claim 1 wherein the adhesive further comprises one or more additives selected from the group consisting of plasticizers, oils, stabilizers, antioxidants, pigments, dyestuffs, polymeric additives, defoamers, preservatives, thickeners, rheology modifiers, humectants, fillers and water.

60. The adhesive of claim 1 wherein the adhesive further comprises one or more aliphatic naphthenic oils, white oils, combinations thereof, or derivatives thereof.

61. The adhesive of claim 1 wherein the adhesive further comprises one or more polymeric additives selected from the group consisting of homo poly-alpha-olefins, copolymers of alpha-olefins, copolymers and terpolymers of diolefins, elastomers, polyesters, block copolymers, ester polymers, acrylate polymers, alkyl acrylate polymers and vinyl acetate polymers.

62. The adhesive of claim 1 wherein the adhesive further comprises one or more plasticizers selected from the group consisting of mineral oils, polybutenes, phthalates, and combinations thereof.
63. The adhesive of claim 1 wherein the adhesive further comprises one or more plasticizers selected from the group consisting of di-iso-undecyl phthalate, di-iso-nonylphthalate, dioctylphthalates, combinations thereof, or derivatives thereof.
64. The adhesive of claim 1 wherein the polymer has a peak melting point between 80 and 140°C.
65. The adhesive of claim 1 wherein the polymer has a Tg of -20°C or less.
66. The adhesive of claim 1 wherein the polymer has a melt index of 50 dg/min or more.
67. The adhesive of claim 1 wherein the polymer has a set time of 30 seconds or less.
68. The adhesive of claim 1 wherein the polymer has a Tc that is at least 10 °C below the Tm.
69. The adhesive of claim 1 wherein the polymer has an  $I_{10}/I_2$  of 6.5 or less.
70. The adhesive of claim 1 wherein the polymer has a range of crystallization of 10 to 60°C wide.
71. A packaging adhesive comprising the adhesive of claim 1.



72. A package comprising the packaging adhesive of claim 71 wherein the adhesive is applied to at least a portion of one or more packaging elements selected from the group consisting of paper, paperboard, containerboard, tagboard, corrugated board, chipboard, kraft, cardboard, fiberboard, plastic resin, metal, metal alloys, foil, film, plastic film, laminates, and sheeting.

73. A package comprising the packaging adhesive of claim 71 wherein the adhesive is applied to at least a portion of one or more packaging elements selected from the group consisting of cartons, containers, crates, cases, corrugated cases, and trays.

74. A package comprising the packaging adhesive of claim 71 wherein the adhesive is applied to at least a portion of one or more packaging elements selected from the group consisting of cereal products, cracker products, beer packaging, frozen food products, paper bags, drinking cups, milk cartons, juice cartons, drinking cups, and containers for shipping produce.

75. The package of claim 74 where the adhesive has a percent substrate fiber tear of from 75% to 100% at 22 °C.

76. The package of claim 74 where the adhesive has a percent substrate fiber tear of from 20% to 100% at 22 °C.

77. The package of claim 74, where the adhesive has a percent substrate fiber tear of from 50% to 100% at -20 °C.

78. The package of claim 74 where the adhesive has a percent substrate fiber tear of from 90% to 100% at -20 °C.

79. The package of claim 74 where the adhesive has a percent substrate fiber tear of from 20% to 100% at 50 °C.

80. The package of claim 74 where the adhesive has a percent substrate fiber tear of from 50% to 100% at 50 °C.

81. A disposable article comprising the adhesive of claim 1 wherein the adhesive is applied to at least a portion of one or more disposable elements selected from the group consisting of nonwoven fabrics, non-woven webs, non-elastic nonwoven fabrics, elastic nonwoven fabrics, necked-bonded laminates, stretch-bonded laminates, spunbond-meltblown-spunbond laminates, polypropylene spunbonded layers, polyethylene layers, combination polyethylene and polypropylene spunbonded layers, elastic strands, styrene-isoprene-styrene, styrene-butadiene-styrene, styrene-ethylene/propylene-styrene, styrene-co-butadiene-styrene, polyurethane, woven fabrics, polypropylene, polyester, body fluid impermeable backsheets, body fluid impermeable layers, body fluid permeable layers, body fluid permeable covers, absorbents, tissues, elastomeric materials, superabsorbent polymers, polyolefin films, polyester films, polyvinylchloride films, polyvinylidene chloride films, polyvinyl acetate films, elastic attachment tape, frontal tape backing, wood, paper, barrier films, film laminates, nonwoven composites, textile materials, woven materials, durable fabrics, absorbents, elastomeric strands, elastomeric webs, tissues, films, coverstock materials, nonwoven polyethylene, perforated polyethylene, superabsorbent polymers, filaments, porous webs, fibers, loop fastener material, spunbonded nonwoven articles, liners, elastic side panels, fastening tape, elastic bands, rayon, nylon, cellulosic pulp, cellulosic fluff, and superabsorbent batts.

82. A disposable article comprising the adhesive of claim 1 wherein the adhesive is applied to at least a portion of one or more disposable elements selected from the group consisting of diapers, training pants, sanitary napkins, panty liners, incontinent wear, bed pads, surgical gowns, surgical drapes, rodent traps, hook and loop fasteners, garments, medical garments, and swimwear.

83. The disposable article of claim 81 wherein the disposable element is adhered to a second disposable element by the adhesive.

84. The disposable article of claim 81, wherein the adhesive composition further comprises one or more solvents selected from the group consisting of hexane, heptane, mineral spirits, xylene, toluene, benzene, chlorinated hydrocarbons, and combinations or derivatives thereof.

85. The disposable article of claim 81, wherein the adhesive composition further comprises one or more antioxidants selected from the group consisting of tris(di-t-butyl-p-hydroxybenzyl)-trimethylbenzene, alkylated bisphenol, zinc dibutyl dithiocarbamate, 4,4'-methylene bis(2,6-di-tert-butylphenol), tetrakis[methylene(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)methane], lauryl stearyl thiodipropionate, dilauryl 3,3'-thiodipropionate, 2,6-di-tert-butyl-p-cresol, and combinations or derivatives thereof.

86. The disposable article of claim 81, wherein the adhesive composition further comprises one or more stabilizers selected from the group consisting of hindered phenols, sulfur phenols, phosphorous-containing phenols, 1,3,5-trimethyl-2,4,6-tris(3-5-di-tert-butyl-4-hydroxybenzyl) benzene, pentaerythritol tetrakis-3(3,5-di-tert-butyl-4-hydroxyphenyl) propionate, n-octadecyl-3(3,5-di-tert-butyl-4-hydroxyphenyl) propionate, 4,4'-methylenebis(4-methyl-6-tert-butylphenol), 4,4'-thiobis(6-tert-butyl-o-cresol), 2,6-di-tert-butylphenol, 6-(4-hydroxyphenoxy)-2,4-bis(n-octylthio)-1,3,5-triazine, 2,4,6-tris(4-hydroxy-3,5-di-tert-butyl-phenoxy)-1,3,5-triazine, di-n-octadecyl-3,5-di-tert-butyl-4-hydroxybenzylphosphonate, 2-(n-octylthio)ethyl-3,5-di-tert-butyl-4-hydroxybenzoate, sorbitol hexa-(3,3,5-di-tert-butyl-4-hydroxy-phenyl) propionate, and combinations or derivatives thereof.

87. The disposable article of claim 81 wherein the polymer has a melt index of 50 dg/min or more.

88. The disposable article of claim 81 wherein the adhesive composition has a PAFT of from 30 °C to 110 °C.

89. The disposable article of claim 81, wherein the adhesive composition has a SAFT of 50 °C or more.
90. The disposable article of claim 81, wherein the adhesive composition has a tensile strength at break of 0.69 MPa or more at 25 °C.
91. The disposable article of claim 81, wherein the adhesive composition has a tensile strength of from 1.38 to 3.45 MPa at 25 °C.
92. The disposable article of claim 81, wherein the adhesive composition has a Brookfield viscosity of from 50 to 25,000 mPa•s at 177 °C.
93. The disposable article of any of claim 81, wherein the adhesive composition has a Brookfield viscosity of from 500 to 7,000 mPa•s at 177 °C.
94. The disposable article of claim 81, wherein the adhesive composition has a cloud point of 200 °C or less.
95. The disposable article of claim 81 wherein the adhesive composition has a glass transition temperature of from -65 °C to 25 °C.
96. The disposable article of claim 81, wherein the adhesive composition has a Peel strength of from 90 to 1000 g/cm.
97. The disposable article of claim 81, wherein the adhesive composition has a complex viscosity of from 50 poise or less at 1,000 rad/s shear rate at 177 °C.
98. The disposable article of claim 81, wherein the adhesive composition has an application temperature of from 100 °C to 200 °C.
99. The disposable article of claim 81, wherein the adhesive composition has a

peel strength of from 90 to 625 g/cm.

100. The disposable article of claim 81, wherein the adhesive composition has a peel strength of from 265 to 625 g/cm.

101. The disposable article of claim 81, wherein the adhesive composition has a peel strength of from 15 to 450 g/cm.

102. The disposable article of claim 81, wherein the disposable article is a consumer good.

103. A film comprising the adhesive composition of claim 1.

104. The film of claim 103, further comprising one more additional polymer components selected from the group consisting of polyethylene, polypropylene, polyester, polyethylene terephthalate, polyvinyl chloride, polyvinylidene chloride, polyvinyl acetate, polyamides, homo polymers thereof, and copolymers thereof.

105. The film of claim 103, wherein the film comprises a layer selected from the group consisting of paper, foil, metal, metal alloys, polyethylene, polypropylene, polyester, polyethylene terephthalate, polyvinyl chloride, polyvinylidene chloride, polyvinyl acetate, polyamides, homo polymers thereof, and copolymers thereof.

106. The film of claim 103 where the film comprises a layer of polypropylene.

107. The film of claim 103 where the film comprises a layer of oriented polypropylene.

108. The film of claim 103 where the film comprises a layer of biaxially oriented polypropylene.

109. A pressure sensitive adhesive comprising the adhesive composition of claim 1.

110. The pressure sensitive adhesive of claim 109, wherein the adhesive composition has a glass transition temperature (T<sub>g</sub>) of from -65 °C to 30 °C.

111. The pressure sensitive adhesive of claim 109, wherein the adhesive composition has a storage modulus of from  $1 \times 10^4$  to  $1 \times 10^7$  dynes/cm<sup>2</sup> at 25 °C and 1 radian/second.

112. The pressure sensitive adhesive of claim 109, wherein the adhesive composition has a Brookfield viscosity of 20,000 mPa·s or less at 150 °C.

113. The pressure sensitive adhesive of claim 109, wherein the size exclusion chromatography trace of the polymer is bi-modal.

114. The pressure sensitive adhesive of claim 109, wherein the pressure sensitive adhesive has a Brookfield viscosity of 10,000 mPa·s or less at 190°C.

115. The pressure sensitive adhesive of claim 109, wherein the pressure sensitive adhesive has a set time of 30 minutes or less.

116. The pressure sensitive adhesive of claim 109, wherein the pressure sensitive adhesive composition is a consumer article.

117. A laminate article comprising two or more layers in combination with an the adhesive composition of claim 1.

118. The laminate article of claim 117, wherein the adhesive composition is present between the layers.

119. The laminate article of claim 117, wherein at least one of the layers comprise one or more materials selected from the group consisting of wood, plastic, paper, rubber, thermoplastic, cardboard, metal, metal foil, metallized surfaces, cloth, non-wovens, spunbonded fibers, stone, plaster, glass, rock, ceramics, films, and foams.

120. The laminate article of claim 117, comprising more than two layers and wherein each layer is individually selected from the group consisting of wood, plastic, paper, rubber, thermoplastic, cardboard, metal, metal foil, metallized surfaces, cloth, non-wovens, spunbonded fibers, stone, plaster, glass, rock, ceramics, films, and foams.

121. The laminate article of claim 117, wherein the two or more layers comprise a first layer and a second layer, the second layer being formed from a material that is different than a material of the first layer.

122. The laminate article of claim 117, further comprising a releasing paper or releasing agent present on a surface layer.

123. The laminate structure of claim 117, wherein the laminate structure is produced by a method selected from the group consisting of spraying, extrusion molding, fusion bonding, injecting the polymer, and hot-melt adhesion techniques.

124. The laminate article of claim 117, wherein at least one of the layers comprises a combination of the adhesive composition and one or more materials selected from the group consisting of wood, plastic, paper, rubber, thermoplastic, cardboard, metal, metal foil, metallized surfaces, cloth, non-wovens, spunbonded fibers, stone, plaster, glass, rock, ceramics, films, and foams.

125. The laminate article of claim 117, wherein the adhesive composition has an open time of 60 seconds or less.

126. The laminate article of claim 117, wherein the adhesive composition has a set time of 3 seconds or more.

127. The laminate article of claim 117, wherein the adhesive composition has a percent substrate fiber tear of from 75% to 100% at 22 °C.

128. The laminate article of claim 117, wherein the adhesive composition has a PAFT of 60 °C or more.

129. The laminate article of claim 117, wherein the adhesive composition has a SAFT of 50 °C or more.

130. The laminate article of claim 117, wherein the adhesive composition has a viscosity of from 0.2 Pa·s to 8 Pa·s at 177 °C.

131. The laminate article of claim 117, wherein the adhesive composition has a viscosity of from 0.5 Pa·s to 2.5 Pa·s at 177 °C.

132. The laminate article of claim 117, wherein the adhesive composition has a glass transition temperature of from -65 °C to 30 °C.

133. The laminate article of claim 117, wherein the adhesive composition has a Dot T-Peel of from 3 N to 4,000 N.

134. The laminate article of claim 117, wherein the adhesive composition has a Dot T-Peel of from 5 N to 3,000 N.

135. The laminate article of claim 117, wherein the adhesive composition has a Dot T-Peel of from 15 N to 1,000 N.

136. The laminate article of claim 117, wherein the laminate article is a consumer good.



137. A fiber product comprising one or more fibrous materials and the adhesive composition of claim 1.

138. The fiber product of claim 137, wherein the fibrous material comprises a single-component fiber, a multi-component fiber, or a combination thereof.

139. The fiber product of claim 137, wherein the fibrous material comprises one or more materials selected from the group consisting of cotton, hemp, cellulose esters, polyesters, wool, human hair, kevlar, nylon, nomax, polyamides, polyacrylates, polyolefins, and combinations thereof.

140. The fiber product of claim 137, wherein the fibrous material comprises one or more polymers or copolymers selected from the group consisting of polyethylene terephthalate, polybutylene terephthalate, polymethylene terephthalate, and poly-ethyleneoxybenzoate.

141. The fiber product of claim 137, wherein the fibrous material comprises one or more polymers or copolymers selected from the group consisting of polyethylene, polypropylene, ethylene acrylate polymers, ethylene alkyl acrylate polymers, and ethylene-vinyl acetate polymers.

142. The fiber product of claim 137, wherein the fiber product is a nonwoven article.

143. The fiber product of claim 142, wherein the fibrous material comprises one or more materials selected from the group consisting of polypropylene, rayon, polyester, polyethylene, nylon, cellulose, viscose, ethylene-propylene copolymers, polyolefin polymers, polyamides, polycarbonate, polystyrene, thermoplastic elastomers, fluoropolymers, vinyl polymers, carbon, glass, minerals, wool, acrylics, polyvinylchloride, polyurethane, organic binders, and combinations thereof.

144. The fiber product of claim 143, wherein the fiber product is selected from the group consisting of diapers, swimwear, child training pants, adult incontinence garments, feminine care products, medical garments, bed pads, surgical drapes, cloth linings, scrubbing pads, automotive interior parts, garments, tapes, face masks and respirators, air filters, vacuum bags, oil and chemical spill sorbents, thermal insulation, first aid dressings, medical wraps, fiberfill, outerwear, bed quilt stuffing, furniture padding, filter media, scrubbing pads, wipe materials, and combinations thereof.

145. The fiber product of claim 137, wherein the fiber product is a carpet backing article.

146. The fiber product of claim 145 further comprising a primary backing material, wherein the fibrous materials are attached to the primary backing material and the adhesive composition is disposed on at least a portion of the fibrous materials.

147. The fiber product of claim 146 further comprising a second backing material adhered to the adhesive composition.

148. The fiber product of claim 146, wherein the primary backing material is selected from the group consisting of woven jute, woven slit polypropylene film, burlap, needle punched materials, non-woven polypropylene, and combinations thereof.

149. The fiber product of claim 137, wherein the fibrous material includes a cross-section having a shape selected from the group consisting of circular, elliptic, T-shaped, Y-shaped, +-shaped, hollow, square, multilobal, ribbon, and polygonal.

150. The fiber product of claim 137, wherein the fiber product comprises clothing, rugs, insulation, carpet, composite materials, printed circuitboard prepegs, wigs, or combinations thereof.

151. The fiber product of claim 137, wherein the adhesive composition further includes one or more additives selected from the group consisting of surfactants, foaming agents, polymer compatibilizers, fire retardants and water.

152. The fiber product of claim 137, wherein the adhesive composition has a percent substrate fiber tear from 75% to 100% at 22 °C.

153. The fiber product of claim 137, wherein the adhesive composition has a PAFT of 50 °C or more.

154. The fiber product of claim 137, wherein the adhesive composition has a PAFT of 75 °C or more.

155. The fiber product of claim 137, wherein the adhesive composition has a SAFT of 70 °C or more.

156. The fiber product of claim 137, wherein the adhesive composition has a tensile strength at break of at least 1MPa at 25 °C.

157. The fiber product of claim 137, wherein the adhesive composition has a Brookfield viscosity of less than 9 Pa·s at 177 °C.

158. The fiber product of claim 137, wherein the adhesive composition has a Brookfield viscosity of from 0.2 to 8 Pa·s at 177 °C.

159. The fiber product of claim 137, wherein the adhesive composition has a viscosity of from 0.5 to 2.5 Pa·s at 177 °C.

160. The fiber product of claim 137, wherein the adhesive composition has a cloud point of 200 °C or less.

161. The fiber product of claim 137, wherein the adhesive composition has a cloud point of 190 °C or less.

162. The fiber product of claim 137, wherein the adhesive composition has a cloud point of 130 °C or less.

163. The fiber product of claim 137, wherein the adhesive composition has a glass transition temperature of from -65 °C to 30 °C.

164. The fiber product of claim 145, wherein the adhesive composition has a tuft bind of 1 kg or more.

165. The fiber product of claim 145, wherein the adhesive composition has a tuft bind of 3 kg or more.

166. The fiber product of claim 145, wherein the adhesive composition has a tuft bind of 5 kg or more.

167. The fiber product of claim 145, wherein the adhesive composition has a tuft bind of 15 kg or more.

168. The fiber product of claim 137, wherein the adhesive composition has a flexibility of 10 °C or less.

169. The fiber product of claim 137, wherein the adhesive composition has a flexibility of 5 °C or less.

170. The fiber product of claim 137, wherein the fiber product is a consumer good.

171. A hot melt adhesive composition comprising the adhesive composition of claim 1.

172. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a percent substrate fiber tear of from 75% to 100% at 25 °C.

173. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a percent substrate fiber tear of from 95% to 100% at 25 °C.

174. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a percent substrate fiber tear of from 50% to 100% at -20 °C.

175. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a percent substrate fiber tear of from 95% to 100% at -20 °C.

176. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a PAFT of 200 °C or less.

177. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a SAFT of 200 °C or less.

178. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a tensile strength at break of 20 bar or more at 25 °C.

179. The hot melt adhesive composition of claim 171, wherein the adhesive composition has an tensile strength at break of 27 bar or more at 25 °C.

180. The hot melt adhesive composition of claim 171, wherein the adhesive composition has an tensile strength at break of 34 bar or more at 25 °C.

181. The hot melt adhesive composition of claim 171, wherein the adhesive

composition has an tensile strength at break of 55 bar or more at 25 °C.

182. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a percent elongation of 200% or more strain of the original length at 25°C.

183. The hot melt adhesive composition of claim 171, wherein the adhesive composition has a cloud point of 100 °C or less.

184. The hot melt adhesive composition of claim 171, wherein the hot melt adhesive composition is a consumer good.

185. A tape comprising the adhesive composition of claim 1 and a backing element.

186. The tape of claim 185, wherein the backing element has two opposing sides and the adhesive composition is applied to at least one side of the backing element.

187. The tape of claim 186, wherein the adhesive composition is applied to a portion of both of the two opposing sides.

188. The tape of claim 185, further comprising a release material disposed on a side opposite the adhesive composition.

189. The tape of claim 188, wherein the adhesive composition releasably contacts the release material.

190. The tape of claim 185, wherein the backing element is wound upon itself to form a roll.

191. The tape of claim 185 adhered to a substrate selected from the group consisting of plastic, polyolefins, stainless steel, paper, paperboard, containerboard, tagboard, corrugated board, chipboard, kraft paper, cardboard, fiberboard, plastic resin, metal, metal alloys, foil, skin, film, plastic film, laminates, clothing, containers, surgical instruments, medical devices, glass, and sheeting.

192. The tape of claim 185, wherein the backing element is selected from a group consisting of polymeric films, polyester films, polyolefin-based films, polyurethane films, polyvinylchloride foam, polyethylene foam, nonwoven polyurethane, nonwoven polyester, knitted fabric, face stock, paper, synthetic polymeric material, plastic, polyolefins, such as polyethylene and polypropylene, polyester, polyethylene terephthalate, polyvinyl chloride, kraft paper, polymers, laminates, latex saturated paper, foil, litho stock, lightweight stock, styrene foam, laminated foam, expanded polystyrene foam, woven fabric, non-woven fabric, cloth, creped paper, thermoplastic, and mixtures thereof.

193. The tape of claim 185, wherein the adhesive composition further comprises one or more additives selected from the group consisting of plasticizers, oils, stabilizers, antioxidants, pigments, dyestuffs, thickeners, rheology modifiers, fillers, antiblock additives, polymeric additives, surfactants, processing aids, crosslinking agents, neutralizing agents, flame retardants, compatibilizers, and antimicrobial agents.

194. The tape of claim 185, wherein the adhesive composition has a viscosity of less than 200 Pa·s at 160°C.

195. The tape of claim 185, wherein the adhesive composition has a glass transition temperature of from -65 °C to 30 °C.

196. The tape of claim 185, wherein the adhesive composition has a peel adhesion at a 180° peel angle when the substrate comprises glass of from 90 g/cm to 1800 g/cm.

197. The tape of claim 185, wherein the adhesive composition has a peel adhesion at a 180° peel angle when the substrate comprises stainless steel of from 100 g/cm to 2000 g/cm.

198. The tape of claim 185, wherein the adhesive composition has a rolling ball tack of from 0.5 cm to 30 cm.

199. The tape of claim 185, wherein the adhesive composition has a hot shear strength when the substrate comprises stainless steel of 10 minutes or more at 40 °C.

200. The tape of claim 185, wherein the adhesive composition has a holding power when the substrate comprises stainless steel of 1 minute or more at 12.5 x 25.0 mm with a 1-kg load.

201. The tape of claim 185, wherein the adhesive composition has a peak tan delta of from -65 °C to 30 °C.

202. The tape of claim 185, wherein the adhesive composition has a probe tack of from 1 g to 1000 g.

203. The tape of claim 185, wherein the adhesive composition has a plateau shear modulus of from  $1 \times 10^4$  dynes/cm<sup>2</sup> to  $1 \times 10^7$  dynes/cm<sup>2</sup> at 25°C.

204. The tape of claim 185, wherein the adhesive composition has a melt viscosity of from 1000 mPas to 250,000 mPas at 175°C.

205. The tape of claim 185, wherein the tape is a consumer good.



206. A woodworking article comprising the adhesive of claim 1 and a structural element, wherein the adhesive composition is applied to at least a portion of the structural element.

207. The woodworking article of claim 206, wherein the structural element comprises wood or plywood, or plastic or veneer.

208. The woodworking article of claim 206, wherein the structural element is selected from the group consisting of lumber, wood, fiberboard, plasterboard, gypsum, wallboard, plywood, PVC, melamine, polyester, impregnated paper, and sheetrock.

209. The woodworking article of claim 206, wherein the woodworking article is selected from the group consisting of indoor furniture, outdoor furniture, trim, molding, doors, sashes, windows, millwork and cabinetry.

210. The woodworking article of claim 206, wherein the adhesive composition has a Brookfield viscosity of 10 Pa·s to 150 Pa·s.

211. The woodworking article of claim 206, wherein the adhesive composition has a plateau modulus of  $1 \times 10^6$  dynes/cm<sup>2</sup> to  $1 \times 10^8$  dynes/cm<sup>2</sup> at 25 °C and 1 radian per second.

212. The woodworking article of claim 206, wherein the adhesive composition has a glass transition temperature of -65 °C to 30 °C.

213. The woodworking article of claim 206, wherein the adhesive composition has an open time of 5 minutes or more.

214. The woodworking article of claim 206, wherein the adhesive composition has an open time of 10 minutes or more.

215. The woodworking article of claim 206, wherein the adhesive composition has an open time of 20 minutes or more.

216. The woodworking article of claim 206, wherein the adhesive composition has a set time of 1 minute or less.

217. The woodworking article of claim 206, wherein the adhesive composition has a set time of 5 minutes or less.

218. The woodworking article of claim 206, wherein the adhesive composition has a set time of 10 minute or less.

219. A wooden consumer article comprising the adhesive composition of claim 1.

220. A label for adhering to a substrate comprising the adhesive composition of claim 1, a backing element, and a release liner, wherein the release liner is adhered to the backing element using the adhesive composition.

221. The label of claim 220, wherein the backing element is selected from the group consisting of plastic, polyolefins, stainless steel, paper, paperboard, containerboard, tagboard, corrugated board, chipboard, kraft paper, cardboard, fiberboard, plastic resin, metal, metal alloys, foil, skin, film, plastic film, laminates, clothing, containers, surgical instruments, medical devices, glass, and sheeting.

222. The label of claim 220, wherein the backing element is selected from the group consisting of polymeric film, polyester film, polyolefin-based film, polyurethane film, polyvinylchloride foam, polyethylene foam, nonwoven polyurethane, nonwoven polyester, knitted fabric, paper, synthetic polymeric material, plastic, polyolefin, polyethylene, polypropylene, polyester, polyethylene

terphthalate, polyvinyl chloride, kraft paper, polymers, laminate, latex saturated paper, foil, litho stock, lightweight stock, styrene foam, laminated foam, expanded polystyrene foam, woven fabric, non-woven fabric, cloth, creped paper, thermoplastic, and mixtures of polyethylene and polypropylene.

223. The label of claim 220, wherein the backing element and the release liner have two opposing sides and the adhesive composition is applied to at least one of the two opposing sides of the backing element or at least one of the two opposing sides of the release liner.

224. The label of claim 220, wherein the adhesive composition has a brookfield viscosity of 50,000 mPa·s or less at 177 °C.

225. The label of claim 220, wherein the adhesive composition has a glass transition temperature of from -65 °C to 30 °C.

226. The label of claim 220, wherein the adhesive composition has a plateau shear modulus of from  $1 \times 10^4$  dynes/cm<sup>2</sup> to  $1 \times 10^7$  dynes/cm<sup>2</sup> at 25 °C.

227. The label of claim 220, wherein the adhesive composition has a peel adhesion at a 180° peel angle when the substrate comprises glass of from 1 to 1800 g/cm.

228. The label of claim 220, wherein the adhesive composition has a peel strength at a 180° peel angle when the substrate comprises polyethylene film of from 1 to 1800 g/cm.

229. The label of claim 220, wherein the adhesive composition has a rolling ball tack of from 0.1 cm to 30 cm.

230. The label of claim 220, wherein the adhesive composition has a loop tack when the substrate comprises glass of from 1 N/cm to 10 N/cm.

231. The label of claim 220, wherein the adhesive composition has a loop tack when the substrate comprises polyethylene film of from 1 N/cm to 10 N/cm.

232. The label of claim 220, wherein the adhesive composition has a hot shear strength when the substrate comprises stainless steel of greater than 40 minutes at 40 °C.

233. The label of claim 220, wherein the adhesive composition has a holding power when the substrate comprises stainless steel of greater than 1 minute at 12.5 x 25.0 mm with a 1-kg load.

234. The label of claim 220, wherein the adhesive composition has a peak tan delta of from -20 °C to 10 °C.

235. The label of claim 220, wherein the adhesive composition has a Polyken probe tack of from 1 g to 900 g.

236. A bookbinding article comprising the adhesive composition of claim 1 to 39 and a binder element, wherein the adhesive composition is applied to at least a portion of the binder element.

237. The bookbinding article of claim 236, wherein the bookbinding article is selected from the group consisting of hard cover books, periodicals, text books, manuals, journals, soft cover text books, paperback books, magazines, and catalogs.

238. The bookbinding article of claims 236, wherein the binder element comprises paper or heavy stock paper.

239. The bookbinding article of claim 236, wherein the adhesive composition has a percent substrate fiber tear of from 75% to 100% at 22 °C.

240. The bookbinding article of claim 236, wherein the adhesive composition has a percent substrate fiber tear of from 95% to 100% at 22 °C.

241. The bookbinding article of claim 236, wherein the adhesive composition has a PAFT of 60 °C or more.

242. The bookbinding article of claim 236, wherein the adhesive composition has a PAFT of 200 °C or less.

243. The bookbinding article of claim 236, wherein the adhesive composition has a SAFT of 70 °C or more.

244. The bookbinding article of claim 236, wherein the adhesive composition has a SAFT of 200 °C or less.

245. The bookbinding article of claim 236, wherein the adhesive composition has an tensile strength at break of from 27.5 bar to 82 bar at 25 °C.

246. The bookbinding article of claim 236, wherein the adhesive composition has an tensile strength at break of from 27.5 bar to 65 bar at 25 °C.

247. The bookbinding article of claim 236, wherein the adhesive composition has an tensile strength at break of from 27.5 bar to 40 bar at 25 °C.

248. The bookbinding article of claim 236, wherein the adhesive composition has a percent elongation of from 100% to 1000% strain of the original length at 25 °C.

249. The bookbinding article of claim 236, wherein the adhesive composition has a percent elongation of from 100% to 750% strain of the original length at 25 °C.

250. The bookbinding article of claim 236, wherein the adhesive composition has a percent elongation of from 100% to 600% strain of the original length at 25 °C.

251. The bookbinding article of claim 236, wherein the adhesive composition has a ratio of tensile strength at break to elongation at break of 1.5 or less.

252. The bookbinding article of claim 236, wherein the adhesive composition has a ratio of tensile strength at break to elongation at break of 1.25 or less.

253. The bookbinding article of claim 236, wherein the adhesive composition has ratio of tensile strength at break to elongation at break of 0.9 or less.

254. The bookbinding article of claim 236, wherein the adhesive composition has a viscosity of 2.5 Pa·s or less at 177 °C.

255. The bookbinding article of claim 236, wherein the adhesive composition has a viscosity of 10 Pa·s or less at 177 °C.

256. The bookbinding article of claim 236, wherein the adhesive composition has a glass transition temperature of from -65 °C to 30 °C.

257. The bookbinding article of claim 236, wherein the adhesive composition has a Young's Modulus of from 65 to 690 bar.

258. The bookbinding article of claim 236, wherein the adhesive composition has a Dot T-Peel of from 3 N to 4,000 N.

259. The bookbinding article of claim 236, wherein the adhesive composition has a Dot T-Peel of from 5 N to 3,000 N.

260. The bookbinding article of claim 236, wherein the adhesive composition has a Dot T-Peel of from 15 N to 1,000 N.

261. The bookbinding article of claim 236, wherein the bookbinding article is a consumer good.

262. A roadmarking composition comprising a binder comprising the adhesive composition of claim 1, and one or more fillers.

263. The roadmarking composition of claim 262, wherein the roadmarking composition is applied to one or more substrates selected from the group consisting of asphalt, concrete, metal, brick, cobbles, ceramics, polymeric materials, cinder blocks, soft sports surfaces, playground surfaces, runways, tartan substitutes, concrete, metals, asphalt, bitumen, bricks, cobbles, tiles, steel plates, wood, ceramics, polymeric materials, glass, concrete blocks, porcelain, stone, wood panels, particle board, wooden vehicle parts, cinder blocks, and scrims.

264. The roadmarking composition of claim 262, wherein the binder further comprises a copolymer having a Mw of from 100,000 to 250,000.

265. The roadmarking composition of claim 262, wherein the binder further comprises a copolymer having a Mw of from 250,000 to 500,000.

266. The roadmarking composition of claim 262, wherein the binder further comprises a first copolymer having a Mw of from 100,000 to 250,000 and a second copolymer having a Mw of from 250,000 to 500,000.

267. The roadmarking composition of claim 262, wherein the binder further comprises one or more waxes selected from the group consisting of polar waxes, non-polar waxes, Fischer-Tropsch waxes, oxidized Fischer-Tropsch waxes, hydroxystearamide waxes, functionalized waxes, polypropylene waxes, polyethylene waxes, wax modifiers, maleic anhydride grafted, polyethylenes with

pendant acid functionality moieties, paraffin waxes, microcrystalline waxes, and combinations thereof.

268. The roadmarking composition of claim 262, wherein the binder further comprises one or more additives.

269. The roadmarking composition of claim 262, wherein the binder further comprises one or more additives selected from the group consisting of plasticizers, oils, stabilizers, antioxidants, pigments, dyestuffs, polymeric additives, defoamers, preservatives, thickeners, rheology modifiers, humectants, extenders, hindered phenolics, phosphates, antiblock additives, lubricants, photostabilizers, ultraviolet absorbents, dispersants, thickeners, bases, wetting agents, fire retardants, crosslinking agents, curing agents, opacifiers, and water.

270. The roadmarking composition of claim 262, wherein the one or more oils comprise aliphatic oils, naphthenic oils, white oils, soya oils, combinations thereof, and derivatives thereof.

271. The roadmarking composition of claim 262, wherein the binder further includes one or more plasticizers selected from the group consisting of mineral oils, polybutenes, phthalates, hydrocarbon oils, soybean oils, phthalate esters, elastomers, olefin oligomers, vegetable oils, cyclohexane dimethanol dibenzoate, and combinations thereof.

272. The roadmarking composition of claim 262, wherein the one or more fillers are selected from the group consisting of sand, pigments, glass beads, polymer-based beads, calcium carbonate, crushed marble, aggregate, dolomite, talc, glass pearls, prismatic reflectors, lens reflectors, calcite spar, silica sand, graphite, flyash, cement dust, clay, feldspar, nepheline, fumed silica, alumina, magnesium oxide, zinc oxide, barium sulfate, aluminum silicate, calcium silicate, titanates, chalk, reflective inorganic fillers, extending fillers, beads, calcium sulfate, calcium metasilicate, quartz powder, calcined flint powder, mica, calcium



silicate glass fibers, dyes, granite, plaster, slaked lime, alumina, diatomaceous earth, reflecting agents, modifiers, white lead, lithopone, chrome yellow, cadmium yellow, resin beads, polymeric gels, polymers, ceramic materials, crushed glass, stone, corundum, aluminum hydroxide, silicon oxide, glass bubbles, and zinc neodecanoate.

273. The roadmarking composition of claim 262, wherein the binder further includes one or more modifiers selected from the group consisting of succinic anhydride modified polymers and metal oxide.

274. The roadmarking composition of claim 262, wherein the roadmarking composition comprises from 10 to 80 percent by weight of the binder.

275. The roadmarking composition of claim 262, wherein the binder comprises 30 percent or less by weight of the one or more waxes.

276. The roadmarking composition of claim 262, wherein the binder comprises 80 percent by weight or less of the one or more tackifiers.

277. The roadmarking composition of claim 262, wherein the binder comprises 20 percent by weight or less of the one or more plasticizers.

278. The roadmarking composition of claim 262, wherein the binder comprises 5 percent by weight or less of the one or more acid-modified tackifiers or polymers.

279. The roadmarking composition of claim 262, wherein the binder comprises 5 percent by weight or less of the one or more stabilizers.

280. The roadmarking composition of claim 262, wherein the binder comprises 40 percent by weight or less of the one or more polymeric additives.

281. The roadmarking composition of claim 262, wherein the binder comprises 10 percent by weight or less of the one or more opacifiers.

282. The roadmarking composition of claim 262, wherein the binder comprises 1 percent by weight or less of the one or more antioxidants.

283. The roadmarking composition of claim 262, wherein the roadmarking composition comprises from 20 to 90 percent by weight of the one or more fillers.

284. The roadmarking composition of claim 262, wherein the one or more fillers comprises 50 percent by weight or less of the one or more beads.

285. The roadmarking composition of claim 262, wherein the one or more fillers comprises from 10 to 40 percent by weight of the one or more beads.

286. The roadmarking composition of claim 262, wherein the one or more fillers comprises from 15 to 30 percent by weight of the one or more beads.

287. The roadmarking composition of claim 262, wherein the one or more fillers comprises 20 percent by weight or less of the one or more pigments.

288. The roadmarking composition of claim 262, wherein the one or more fillers comprises from 2 to 15 percent by weight of the one or more pigments.

289. The roadmarking composition of claim 262, wherein the one or more fillers comprises from 3 to 10 percent by weight of the one or more pigments.

290. The roadmarking composition of claim 262, wherein the binder has a Zahn viscosity of from of 35 to 180 seconds at 190°C.

291. The roadmarking composition of claim 262, wherein the binder has a Zahn viscosity of less than 120 seconds at 190 °C.

292. The roadmarking composition of claim 262, wherein the binder has a glass transition temperature of from  $-65\text{ }^{\circ}\text{C}$  to  $30\text{ }^{\circ}\text{C}$ .

293. The roadmarking composition of claim 262, wherein the binder has a Dot T-Peel of from 3 N to 4,000 N.

294. The roadmarking composition of claim 262, wherein the binder has a Dot T-Peel of from 5 N to 3,000 N.

295. The roadmarking composition of claim 262, wherein the binder has a Dot T-Peel of from 15 N to 1,000 N.

296. The roadmarking composition of claim 262, wherein the binder has an adhesion to a road surface of  $1.0\text{ N/mm}^2$  or more.

297. The roadmarking composition of claim 262, wherein the binder has an adhesion to a road surface of  $1.2\text{ N/mm}^2$  or more.

298. The roadmarking composition of claim 262, wherein the binder has an adhesion to a road surface of  $1.3\text{ N/mm}^2$  or more.

299. The roadmarking composition of claim 262, wherein the binder has an adhesion to a road surface of  $1.5\text{ N/mm}^2$  or more.

300. The roadmarking composition of claim 262, wherein the binder has a softening point of  $90\text{ }^{\circ}\text{C}$  or more.

301. The roadmarking composition of claim 262, wherein the binder has a softening point of  $95\text{ }^{\circ}\text{C}$  or more.

302. The roadmarking composition of claim 262, wherein the binder has a softening point of 98 °C or more.

303. The roadmarking composition of claim 262, wherein the binder has a softening point of 100 °C or more.

304. The roadmarking composition of claim 262, wherein the binder has a needle penetration of from 5 to 120 s/ 10 mm.

305. The roadmarking composition of claim 262, wherein the binder has a luminance of 70 or more.

306. The roadmarking composition of claim 262, wherein the binder has a luminance of 75 or more.

307. The roadmarking composition of claim 262, wherein the binder has a luminance of 76 or more.

308. The roadmarking composition of claim 262, wherein the binder has a luminance of 78 or more.

309. The roadmarking composition of claim 262, wherein the binder has a melt viscosity of from 0.4 Pa·s to 30 Pa·s at 177 °C.

310. A sealant composition comprising a mixture comprising the adhesive composition of claim 1, wherein the mixture is applied to at least a portion of a substrate surface to be sealed.

311. The sealant composition of claim 310, wherein the substrate is selected from the group consisting of concrete, roofing, marble, anodized aluminum, brick, mortar, granite, limestone, porcelain, glass, painted surfaces, wood, polyvinylchloride, polyacrylate, polycarbonate, polystyrene, fabrics, gaskets,

plastic, stone, masonry materials, pipes, hoses, metal, wiring, skis, polyethylene, polypropylene, polyester, acrylic, PVDC, paper, ethylene vinyl acetate, automobiles, buildings, aircraft, panels, decks, bones, pavement, tailgates, door panels, wheel houses, rocker panels, firewalls, floor hem flanges, trunks, and floorpans.

312. The sealant composition of claim 310, wherein the mixture further comprises one or more waxes selected from the group consisting of polar waxes, non-polar waxes, Fischer-Tropsch waxes, oxidized Fischer-Tropsch waxes, hydroxystearamide waxes, functionalized waxes, polypropylene waxes, polyethylene waxes, wax modifiers, amorphous waxes, carnauba waxes, castor oil waxes, microcrystalline waxes, beeswax, carnauba wax, castor wax, spermaceti wax, vegetable wax, candelilla wax, japan wax, ouricury wax, douglas-fir bark wax, rice-bran wax, jojoba wax, bayberry wax, montan wax, peat wax, ozokerite wax, ceresin wax, petroleum wax, paraffin wax, polyethylene wax, chemically modified hydrocarbon wax, substituted amide wax, and combinations and derivatives thereof.

313. The sealant composition of claim 310, wherein the mixture further comprises one or more additives selected from the group consisting of plasticizers, oils, stabilizers, antioxidants, pigments, aniblock additives, processing aids, neutralizing agents, water, dyestuffs, polymeric additives, defoamers, preservatives, thickeners, rheology modifiers, humectants, fillers, water, crosslinking agents, thixotropic agents, surfactants, adhesion promoters, reinforcing agents, chain extenders, ultraviolet stabilizers, colorants, organic solvents, stabilizers, dryers, wetting agents, nucleating agents, accelerators, curing agents, and combinations or derivatives thereof.

314. The sealant composition of claim 310, wherein the mixture further comprises one or more fillers selected from the group consisting of silica, diatomaceous earth, calcium carbonate, iron oxide, hydrogenated castor oil, fumed silica, precipitated calcium carbonate, hydrophobic treated fumed silicas,

hydrophobic precipitated calcium carbonates, talc, zinc oxides, polyvinyl chloride powders, fungicides, graphite, carbon black, asphalt, carbon fillers, clay, mica, fibers, titanium dioxide, cadmium sulfide, asbestos, wood flour, polyethylene powder, chopped fibers, bubbles, beads, thixotropes, bentonite, calcium sulfate, calcium oxide, magnesium oxide, and combinations or derivatives thereof.

315. The sealant composition of claim 310, wherein the mixture further comprises one or more adhesion promoters selected from the group consisting of silanes, titanates, organosilane, acrylics, acids, anhydrides, epoxy resins, hardening agents, polyamides, methylacrylates, epoxies, phenolic resins, polyisobutylene, aminoalkyl, mercaptoalkyl, epoxyalkyl, ureidoalkyl, carboxy, acrylate and isocyanurate functional silanes, mercaptopropyltrimethoxysilane, glycidoxypropyltrimethoxysilane, aminopropyltriethoxysilane, aminoethylaminopropyltrimethoxysilane, ureidopropyltrimethoxysilane, bis-gamma-trimethoxysilyl-propylurea, 1,3,5-tris-gamma-trimethoxysilylpropylisocyanurate, bis-gamma-trimethoxysilylpropylmaleate, fumarate and gamma-methacryloxypropyltrimethoxysilane, aminopropyltriethoxysilane, and combinations and derivatives thereof.

316. The sealant composition of claim 310, wherein the mixture further comprises one or more crosslinking agents selected from the group consisting of oxime crosslinkers, alkoxysilanes, epoxyalkylalkoxysilanes, amido silanes, aminosilanes, enoxysilanes, tetraethoxysilanes, methyltrimethoxy silane, vinyl trimethoxysilane, glycidoxypropyltrimethoxysilane, vinyl tris-isopropenoxysilane, methyl tris-isopropenoxysilane, methyl tris-cyclohexylaminosilane, methyl tris-secondarybutylaminosilane, polyisocyanates, and combinations or derivatives thereof.

317. The sealant composition of claim 310, wherein the mixture further comprises one or more organic solvents selected from the group consisting of aliphatic solvents, cycloaliphatic solvents, mineral spirits, aromatic solvents,

hexane, cyclohexane, benzene, toluene, xylene, and combinations or derivatives thereof.

318. The sealant composition of claim 310, wherein the mixture further comprises one or more surfactants selected from the group consisting of vinyl-containing or mercapto-containing polyorganosiloxanes, macromonomers with vinyl terminated polydimethyl siloxane, and combinations or derivatives thereof.

319. The sealant composition of claim 310, wherein the mixture further comprises one or more chain extenders selected from the group consisting of amino silanes, amido silanes, acetoxy silanes, and aminoxy silanes, methylvinyl bis-N,-methylacetamidossilane, methylhydrogendiacetoxysilane, dimethylbis-diethylhydroxylaminossilane, dimethylbis-secondarybutylaminossilane, polyisocyanates, and combinations or derivatives thereof.

320. The sealant composition of claim 310, wherein the mixture further comprises one or more antioxidants selected from the group consisting of thioesters, phosphates, hindered phenols, tetrakis (methylene 3-(3',5'-di-t-butyl-4 hydroxyphenyl)pro-pionate)methane, 2,2'-ethyldenebis (4,6-di-tertiarybutylphenol), 1,1-3-tris (2-methyl-4-hydroxy-5-t-butylephenyl) butane, 1,3,5-trimethyl-2,4,6-tris (3,5-tertbutyl-4-hydroxybenzyl)benzene, dilaurylthiodipropionate, pentaerythritol tetrakis (beta-laurylthiopropionate), alkyl-aryldi- and polyphosphates, thiophosphites, and combinations or derivatives thereof.

321. The sealant composition of claim 312, wherein the mixture comprises 30 percent or less by weight of one or more waxes.

322. The sealant composition of claim 312, wherein the mixture comprises 20 percent or less by weight of the one or more waxes.

323. The sealant composition of claim 312, wherein the mixture comprises 10 percent or less by weight of the one or more waxes.

324. The sealant composition of claim 313, wherein the mixture comprises 95 percent or less by weight of the one or more additives.

325. The sealant composition of claim 313, wherein the mixture comprises 50 percent or less by weight of the one or more additives.

326. The sealant composition of claim 313, wherein the mixture comprises 10 percent or less by weight of the one or more additives.

327. The sealant composition of claim 316, wherein the mixture comprises 5 percent by weight or less of the one or more crosslinking agents.

328. The sealant composition of claim 314, wherein the mixture comprises 50 percent by weight or less of the one or more fillers.

329. The sealant composition of claim 318, wherein the mixture comprises 15 percent by weight or less of the one or more surfactants.

330. The sealant composition of claim 315, wherein the mixture comprises 15 percent by weight or less of the one or more adhesion promoters.

331. The sealant composition of claim 310, wherein the mixture comprises 75 percent by weight or less of one or more reinforcing agents.

332. The sealant composition of claim 310, wherein the mixture comprises 30 percent by weight or less of one or more reinforcing agents.

333. The sealant composition of claim 310, wherein the adhesive mixture comprises 50 percent by weight or less of one or more polymeric additives.



334. The sealant composition of claim 320, wherein the mixture comprises of from 0.01 to 10 percent by weight of the antioxidants.

335. The sealant composition of claim 320, wherein the mixture comprises of from 0.05 to 5 percent by weight of the antioxidants.

336. The sealant composition of claim 310, wherein the mixture has a tensile strength modulus at 100% elongation of from 0.003 bar to 0.06 bar at 20 °C.

337. The sealant composition of claim 310, wherein the mixture has a percent elongation at break of 190% or more at 20 °C.

338. The sealant composition of claim 310, wherein the mixture has a viscosity of 9 Pa·s or less at 177 °C.

339. The sealant composition of claim 310, wherein the mixture has a glass transition temperature of from -65 °C to 30 °C.

340. The sealant composition of claim 310, wherein the mixture has a Dot T-Peel of from 3 N to 4,000 N.

341. The sealant composition of claim 310, wherein the mixture has a sag of 7.5 cm or less after 1 week at 70 °C.

342. The sealant composition of claim 310, wherein the mixture has a Shore A hardness of from 3 to 45.

343. The sealant composition of claim 310, wherein the mixture has a tensile strength of from 0.0095 bar to 0.2 bar.

344. The sealant composition of claim 310, wherein the mixture has a percent stress relaxation of 75% or less at 25 °C.

345. The sealant composition of claim 310, wherein the mixture has a shear adhesion on glass of 0.01 bar or more.

346. The sealant composition of claim 310, wherein the mixture has a melting point of 200 °C or less.

347. The sealant composition of claim 310, wherein the mixture has a 180° peel strength against glass of 10 pli or more.

348. A paving composition comprising asphalt, aggregate, and the adhesive composition of claim 1.

349. The paving composition of claim 348, wherein the asphalt is one or more natural asphalts, petroleum asphalts, or any combinations thereof.

350. The paving composition of claim 348, wherein the asphalt comprises asphaltite, gilsonite, grahamite, glance pitch, lake asphalt, trinidad asphalt, or rock asphalt.

351. The paving composition of claim 348, wherein the aggregate is selected from the group consisting of clay, stone, sand, rock, gravel, and slag.

352. The paving composition of claim 348, wherein the composition further comprises fillers selected from a group consisting of carbon black, mine chatt, mine tailings, clinkers, cinders, ash, ground tires, clay, and glass.

353. The paving composition of claim 348, wherein the paving composition comprises 95 percent by weight or less of the aggregate.

354. The paving composition of claim 348, wherein the paving composition comprises from 90 to 96 percent by weight of the aggregate.

355. The paving composition of claim 348, wherein the paving composition comprises from 80 to 99 percent by weight of the asphalt.

356. The paving composition of claim 348, wherein the adhesive composition has a PAFT of 60 °C or more.

357. The paving composition of claim 348, wherein the adhesive composition has a SAFT of 70 °C or more.

358. The paving composition of claim 348, wherein the adhesive composition has a set temperature of from -20 °C to 250 °C.

359. The paving composition of claim 348, wherein the adhesive composition has a Shore A hardness of from 3 to 45.

360. A glue stick comprising an elongated member that includes the adhesive composition of claim 1.

361. The glue stick of claim 360, wherein the glue stick produces an adhesive deposition on a substrate upon application of pressure or heat.

362. The glue stick of claim 361, wherein the substrate is selected from the group consisting of paper, paperboard, containerboard, tagboard, corrugated board, chipboard, kraft, cardboard, fiberboard, plastic resin, metal, metal alloys, foil, film, plastic film, laminates, sheeting, wood, plastic, polystyrene, nylon, polycarbonate, polypropylene, styrofoam, porous substrates, polyvinylchloride, walls, and polyester.

363. The glue stick of claim 360, wherein the adhesive composition further comprises one or more additives selected from the group consisting of plasticizers, oils, stabilizers, antioxidants, synergists, pigments, dyestuffs, polymeric additives, defoamers, preservatives, thickeners, rheology modifiers, humectants, fillers, water, fragrances, fire retardants, colorants, antibiotics, antiseptics, antifungal agents, inorganic salts, gelling agents, binders, surfactants, bases, antimicrobial agents, and anti-foaming agents.

364. The glue stick of claim 360, wherein the adhesive composition further comprises one or more fillers selected from the group consisting of polyethylene, titanium oxide, and calcium carbonate.

365. The glue stick of claim 360, wherein the adhesive composition comprises from 5 to 30 percent by weight of the one or more inorganic salts.

366. The glue stick of claim 360, wherein the adhesive composition comprises 5 percent by weight or less of the one or more colorants, dyes, antioxidants, fragrances, or pigments.

367. The glue stick of claim 360, wherein the adhesive composition comprises 1 percent by weight or less of the one or more antimicrobial agents.

368. The glue stick of claim 360, wherein the adhesive composition has a percent substrate fiber tear of from 75% to 100% at 25 °C.

369. The glue stick of claim 360, wherein the adhesive composition has a percent substrate fiber tear of from 95% to 100% at 25 °C.

370. The glue stick of claim 360, wherein the adhesive composition has a PAFT of 60 °C or more.

371. The glue stick of claim 360, wherein the adhesive composition has a SAFT

of 70 °C or more.

372. The glue stick of claim 360, wherein the adhesive composition has a viscosity of from 1 Pa·s to 50 Pa·s at 177 °C.

373. The glue stick of claim 360, wherein the adhesive composition has a softening point of from 70 to 100 °C.

374. The glue stick of claim 360, wherein the adhesive composition has an application temperature of 190 °C or less.

375. The glue stick of claim 360, wherein the adhesive composition has a Dot T-Peel of from 3 N to 4,000 N.

376. A pipe wrapping article comprising the adhesive of claim 1 and a wrapping element, wherein the adhesive composition is at least partially disposed on or within the wrapping element.

377. The pipe wrapping article of claim 376, wherein the wrapping element is selected from the group consisting of fiberglass, fibers, wovens, nonwovens, fabric, cloth, polyethylene, polypropylene, acrylic rubber, EPDM, nitrile rubber, nylon, epichlorohydrin elastomer, polysulfide, acrylic elastomer, and butyl rubber.

378. The pipe wrapping article of claim 376, wherein the pipe wrapping article is selected from the group consisting of pipes, fittings, tanks, vessels, and containers.

379. The pipe wrapping article of claim 376, wherein the pipe wrapping article is made of a material selected from the group consisting of wood, cement, concrete, nonwoven fabric, woven fabric, aluminum, stainless steel, brass, nickel, glass, glazed ceramics, unglazed ceramics, tiles, polyvinyl chloride, polyethylene

terephthalate, plaster, stucco, asphaltic coatings, roofing felts, synthetic polymer membranes, and foamed polyurethane insulation.

380. The pipe wrapping article of claim 376, wherein the adhesive composition further comprises one or more polymeric additives selected from the group consisting of butyl rubber and polyisobutylene.

381. The pipe wrapping article of claim 376, wherein the adhesive composition has a PAFT of 60 °C or more.

382. The pipe wrapping article of claim 376, wherein the adhesive composition has a SAFT of 70°C or more.

383. The pipe wrapping article of claim 376, wherein the adhesive composition has an tensile strength at break of from 0.7 bar to 1.5 bar at 23 °C.

384. The pipe wrapping article of claim 376, wherein the adhesive composition has a percent elongation of 50% strain or more of the original length at 23 °C.

385. The pipe wrapping article of claim 376, wherein the adhesive composition has a set temperature of from -20 °C to 250 °C.

386. The pipe wrapping article of claim 376, wherein the adhesive composition has an open temperature of from -20 °C to 250 °C.

387. The pipe wrapping article of claim 376, wherein the adhesive composition has a cloud point of 275 °C or less.

388. The pipe wrapping article of claim 376, wherein the adhesive composition has a cloud point of 190 °C or less.

389. The pipe wrapping article of claim 376, wherein the adhesive composition has a cloud point of 130 °C or less.

390. The pipe wrapping article of claim 376, wherein the adhesive composition has a glass transition temperature of 0 °C or less.

391. The pipe wrapping article of claim 376, wherein the pipe wrapping article is a consumer good.

392. An article having a transparent pane comprising:  
one or more transparent panels; and  
the adhesive composition of claim 1 applied to at least a portion of the one or more panels.

393. The article of claim 392, wherein the one or more transparent panels comprises polyvinylbutyral, polyurethane, vinyl acetate, polyethylene, polypropylene, polycarbonate, glass, silicate glass, or a combination thereof.

394. The article of claim 392, wherein the article is selected from the group consisting of bulletproof glass, soundproofing glass, and safety glass.

395. The article of claim 392, wherein the adhesive composition forms a film on the one or more transparent panels.

396. A shingle comprising the adhesive composition of claim 1; and  
a roofing element comprising a first side and a second side, wherein the adhesive composition is applied to at least a portion of the second side.

397. The shingle of claim 396, wherein the roofing element comprises sheet metal.

398. The shingle of claim 397, wherein the roofing element is selected from the group consisting of copper, steel, zinc, aluminum, combinations thereof, and alloys thereof.

399. The shingle of claim 396, wherein the first side comprises one or more materials selected from the group consisting of roofing asphalt, fabric, aggregate, and combinations thereof.

400. The shingle of claim 396, wherein the second side comprises one or more materials selected from the group consisting of rubber, fiberglass, aramid, carbon, polyester, nylon, asphalt, and sheet metal.

401. The shingle of claim 396, wherein the sheet metal comprises copper, aluminum, combinations thereof, or alloys thereof.

402. The shingle of claim 396, wherein the adhesive composition further comprises one or more bituminous materials.

403. The shingle of claim 396, wherein the one or more bituminous materials comprise asphalt.

404. The shingle of claim 396, wherein the adhesive composition comprises 80 percent by weight or less of the one or more bituminous materials.

405. The shingle of claim 396, wherein the adhesive composition has a SAFT of 90 °C or more.

406. The shingle of claim 396, wherein the adhesive composition has an tensile strength at break of 6.5 bar or more at 25 °C.

407. The shingle of claim 396, wherein the adhesive composition has a percent elongation of 5% strain or more of the original length at 25 °C.



408. The shingle of claim 396, wherein the adhesive composition has a viscosity of from 0.2 Pa·s to 10 Pa·s at 177 °C.

409. The shingle of claim 396, wherein the adhesive composition has a glass transition temperature of from -65 °C to 30 °C.

410. The shingle of claim 396, wherein the adhesive composition has a softening point of from 80 °C to 200 °C.

411. A reflective article comprising:  
a reflective material at least partially applied to a substrate surface; and  
the adhesive composition of claim 1.

412. The reflective article of claim 411, wherein the reflective material is selected from the group consisting of prisms and glass beads.

413. The reflective article of claim 411, wherein the substrate surface is selected from the group consisting of roads, bicycle lanes, traffic signs, soft sports surfaces, playground surfaces, ships, runways, pedestrian crosswalks, buildings, tennis courts, driving courses, tartan substitutes, oil rigs, tunnels, concrete, metals, asphalt, bitumen, bricks, cobbles, tiles, steel plates, wood, ceramics, polymeric materials, glass, bridge abutments, traffic barricades, barriers, pipes, poles, guard rails, concrete blocks, curbs, parking lots, porcelain, stone, wood panels, particle board, wooden vehicle parts, cinder blocks, glass windows, traffic drums, traffic cones, scrims, liquid crystal displays, lights, copy machines, electronic backboards, diffuse white standards, and photographic lights.

414. The reflective article of claim 411, wherein the adhesive composition has a set temperature of from -20 °C to 250 °C.

415. The reflective article of claim 411, wherein the adhesive composition has an open temperature of from  $-20\text{ }^{\circ}\text{C}$  to  $250\text{ }^{\circ}\text{C}$ .
416. The reflective article of claim 411, wherein the adhesive composition has a viscosity of  $9\text{ Pa}\cdot\text{s}$  or less at  $177\text{ }^{\circ}\text{C}$ .
417. The reflective article of claim 411, wherein the adhesive composition has a viscosity of from  $0.2\text{ Pa}\cdot\text{s}$  to  $8\text{ Pa}\cdot\text{s}$  at  $177\text{ }^{\circ}\text{C}$ .
418. The reflective article of claim 411, wherein the adhesive composition has a viscosity of from  $0.5\text{ Pa}\cdot\text{s}$  to  $2.5\text{ Pa}\cdot\text{s}$  at  $177\text{ }^{\circ}\text{C}$ .
419. The reflective article of claim 411, wherein the adhesive composition has a cloud point of  $275\text{ }^{\circ}\text{C}$  or less.
420. The reflective article of claim 411, wherein the adhesive composition has a density of  $0.99\text{ g/cm}^3$  or less at  $25\text{ }^{\circ}\text{C}$ .
421. The reflective article of claim 411, wherein the adhesive composition has a glass transition temperature of from  $-65\text{ }^{\circ}\text{C}$  to  $30\text{ }^{\circ}\text{C}$ .
422. The reflective article of claim 411, wherein the adhesive composition has a luminance of 70 or more.
423. The reflective article of claim 411, wherein the adhesive composition has a luminance of 75 or more.
424. The reflective article of claim 411, wherein the reflective article is a consumer good.
425. A carpet comprising the hot melt adhesive composition of claim 1.

426. A tape comprising the hot melt adhesive composition of claim 1.